

Claim 21 also specifies that an intermediate space is included between an outer wall and an inner wall and that the inner wall is permeable to a cryogenic cooling agent. In addition, claim 21 specifies that a porous buffer material is included in the intermediate space.

Claim 21 further specifies that a cooling agent supply line communicates with and empties into the intermediate space "adjacent the open, upper end of said cooling space for introducing a cryogenic cooling agent in liquid form into the porous buffer material . . . for subsequent transfer of the cooling agent from the buffer material into the cooling space through the inner wall in a gaseous phase, wherein no cooling agent lake forms in the cooling equipment." (Emphasis added)

Moreover, claim 21 specifies that a cold gas outlet is located on a lower side of the protective bell and communicates with the cooling space "through said open, upper end of the cooling space and said interior chamber of the protective bell," and that this arrangement permits "cold gas to exit the cooling space through the lower side of the protective bell to prevent misting over of said protective bell." (Emphasis added)

Claim 21 is replete with structural features specified to be employed in conjunction with a cryogenic material and therefore is limited to cooling equipment for cooling a cryogenically cooled material.

In the final rejection of claim 21, the examiner acknowledges that the Rode '648 patent, which is relied upon as the primary reference, fails to teach the following, specified limitations:

- 1) a porous buffer material arranged in the intermediate space;
- 2) a cooling agent supply line introducing the cooling agent into the porous buffer material ;
- 3) a cooling agent being transferred from the buffer material through the inner wall into the cooling space in a gaseous phase;
- 4) the inner wall being permeable; and
- 5) the ability of the cooling equipment to function without a cooling agent lake forming in the cooling equipment.

In addition, in the prior, non-final Office Action of April 27,2010, the Examiner acknowledged that the Rode '648 patent also failed to teach the following specified limitations:

- 6) a removable protective bell including an interior chamber communicating with the open, upper end of the cooling space;
- 7) the protective bell being at least partially transparent;
- 8) glove sleeves on the front side of a protective bell and a cold gas outlet located on a lower side of the bell communicating with the cooling space through the open upper end of the cooling space and the interior chamber of the protective bell.

**Thus, the examiner essentially acknowledges that virtually all of the important claimed features are missing from the primary reference.**

To attempt to overcome the significant shortcomings in the teachings of Rhode, the examiner relies upon teachings in the Roslonski '030 patent and the Arner '293 patent in the final rejection of claim 21.

First, the examiner takes the position that Roslonski teaches a porous buffer material 34 arranged in an outer compartment 32, which the examiner contends corresponds to the claimed intermediate space. In addition, the examiner takes the position that Roslonski discloses an inner wall 20 having holes 36 that correspond to the claim limitation that the inner wall is permeable. The examiner then takes the position that it would have been obvious to modify the cooling equipment disclosed by Rode to also incorporate a porous buffer material arranged in the intermediate space and to make inner wall permeable as taught by Roslonski, so that the cooling agent supply line would first introduce the cooling agent into the porous buffer material to then permit transfer of the cooling agent from the buffer material through the inner wall to more effectively insulate and maintain a reduced temperature in the cooling space. The examiner also states that the presence of a porous buffer material would capture liquid refrigerant flowing through the intermediate space not vaporized in the cooling agent supply line to thereby prevent the formation of a cooling agent lake at the bottom of the cooling space.

Applicants submit that Roslonski is not properly combinable with Rode because it relates to a totally different type of cooling system having no relationship to cryogenics. Secondly, even assuming that the combination is appropriate, that combination does not render obvious the features specified in claim 21.

First, it should be noted that the Roslonski patent is directed to a portable device for cooling bottles of liquid, such as wine. This has absolutely nothing to do with sophisticated cooling apparatus employed in the cryogenic field. In fact, the use of a cryogenic fluid, such as liquid nitrogen, is not even suggested in the Roslonski patent. Roslonski states that the source of refrigerant could be carbon dioxide gas (line 24 of column2).

The Roslonski patent is directed to a device that employs a refrigerant that is always in a gaseous state. The device is not at all concerned with employing a cryogenic fluid that initially is in a liquid state, and which ultimately is caused to transform into a vapor phase to provide the required cryogenic cooling operation.

Accordingly, one skilled in the art would not even think to employ any features of a portable device for cooling bottles of wine in considering possible design features for a cooling device for cooling a cryogenically cooled material, as specified in claim 21.

Moreover, even if the Roslonski patent was properly combinable with Rode, the combination still would not suggest the inclusion of a buffer material arranged in the intermediate space between the outer wall and inner wall, as specified in claim 21.

The Rode construction employs a buffer material in a space that is unrelated to the intermediate space through which a coolant fluid is directed, as is specified in claim 21. As can be seen in Fig. 3 of Rode, the insulation or buffer 44 is not provided in plenums 56, 58 and 60, in which the refrigerant flows.

Thus, the Rode '648 patent teaches that when a buffer material is employed it is not included in any chamber through which the refrigerant flows.

In addition, the flow of refrigerant in the Roslonski device is in a direction opposite to that required in applicant's device, as specified in claim 21.

The examiner apparently recognizes that the combination of Rode and Roslonski, even if proper, fails to disclose the obviousness of a system employing a removable protective bell on the cooling space, let alone a protective bell that includes an interior chamber communicating with an open, upper end of the cooling space. Moreover, since the combination fails to disclose a protective bell of any type, it clearly does not disclose or suggest the obviousness of a protective bell that is at least partially transparent or a protective bell having "a cold gas outlet located on a lower side of the protective bell and communicating with the cooling space through [the] open, upper end of the cooling space and said interior chamber of the protective bell for permitting cooling agent and cold gas to exit the cooling space through the lower side of the protective bell to prevent misting over of protective bell" as is specified in claim 21.

To attempt to overcome the above deficiency in the combination of Rode and Roslonski the examiner further relies upon the teachings in the Arner '293 patent. Applicants submit that this piecemeal combination of references simply is inappropriate and constitutes improper hindsight reconstruction using applicants' disclosed invention as a blueprint for the combination.

Moreover, even if the combination were proper it still does not teach the obviousness of the claimed combination specified in claim 21.

Specifically, in the primary reference to Rode, the flow of coolant is controlled by a fan located in a wall remote from the lid 46, and the fan forces the fluid to flow in a confined, circular path. In other words, there is no system for actually directing a gaseous coolant through an area occupied by the lid 48 (assuming that the lid were replaced by a protective bell, which clearly is not an appropriate or obvious modification that could be made to the Rode structure) to deal with the problem of misting addressed by the present invention, as specified in claim 21.

Moreover, in the Office Action of April 27, 2010, the examiner acknowledged that the Rode system does not preclude the formation of a cooling agent lake within plenum 60 around the coil 68. In this regard, the examiner stated: "Additionally, while it does appear that a cooling agent lake could form within plenum (60) around the coil (68), claim 21 recites that 'no cooling agent lake forms on a bottom of the cooling space.'" (emphasis included)

Claim 21 was then amended to make it clear that the cryogenic system of this invention includes a combination of features to prevent the formation of a cooling agent lake "in the cooling equipment"

rather than on the bottom of the cooling space, as previously claimed. This is a further feature supporting the non-obviousness of the invention specified in claim 21.

Moreover, the Arner '293 patent does not disclose a protective bell communicating the interior chamber thereof with any cooling space, as also is specified in claim 21.

The Arner device is a self-contained freeze box 10 that has side walls 11, 12, front wall 13, back wall 14, floor 15 and cover 16 providing a structure that is "hermetically sealed from the outside atmosphere." (See paragraph beginning on line 45 of column 2). The sample employed in the freeze box 10 is actually supported on a sample holder 28 located within the confines of the freeze box; not in a separate cooling space.

Thus, this difference in function and mode of operation between applicants' cryogenic unit and the freeze box disclosed in the Arner '293 patent is an additional reason why the combination of the Arner '293 patent with the Rode and Roslonski patents does not render obvious the invention specified in independent Claim 21.

Claims 24 – 30, 33, 35 – 38 and 40 are either directly or indirectly dependent upon claim 21 and therefore are submitted to be patentable for at least the same reasons discussed above in connection with claim 21.

Moreover, in connection with the rejection of claims 27 and 28 the examiner has additionally relied upon the teachings in the Palma '336 patent. However, the Palma '336 patent is directed to an invention totally unrelated to the cooling equipment specified in the claims of this application; namely to a coffin construction. Applicants submit that a person skilled in the art would not look to the coffin technology for the purpose of designing cryogenic cooling equipment.

In view of the above amendments and remarks applicants submit that all of the claims presented for consideration herein set forth patentably novel subject matter and an indication to that effect is respectfully requested.

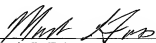
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December 3, 2010  
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Respectfully submitted,

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